

Figure 1

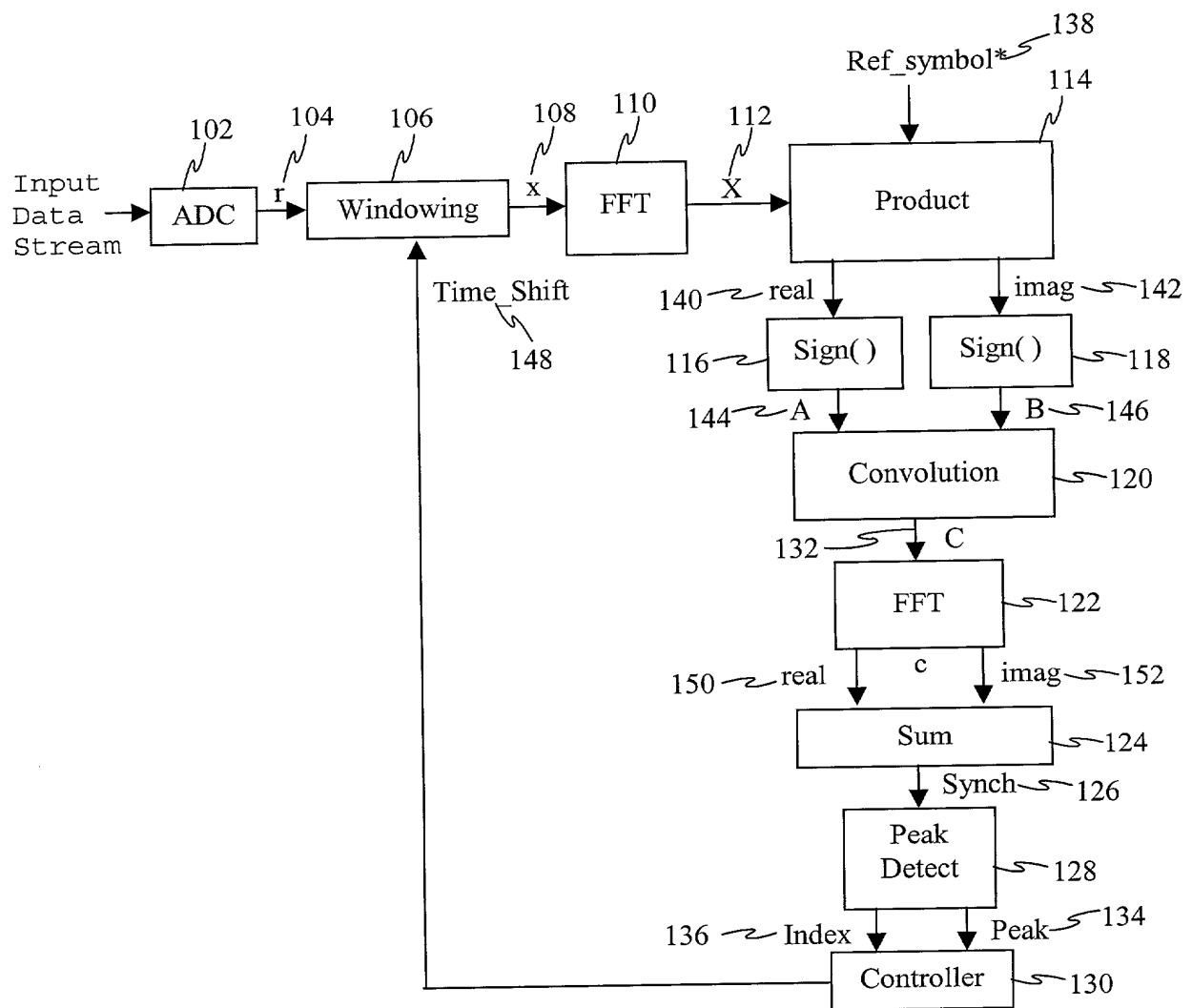


Figure 2

```

synch_symbol=randn(1,256);
Preamble=[synch_symbol, synch_symbol, synch_symbol,
synch_symbol];
Ref_symbol=fft(synch_symbol,256);
Ref_symbol= Ref_symbol(1:128);
% Assume r is a vector of 256 samples taken from the stream
of data, which is % coming out of ADC with a random
starting time. Assume w is a vector of 256 % samples
representing windowing function.
w=hanning(256);
x=r.*w;
X=fft(x,256);
X=X(1:128);
Y=X.*conj(Ref_symbol);
A=sign(real(Y));
B=sign(imag(Y));
C=conv(A,B);
c=fft(C,256);
Synch=real(c(1:128))+imag(c(1:128));
[Peak,Index]=max(abs(Synch));
Time_Shift=(Index-1)*sign(Synch(Index));

```

Figure 3

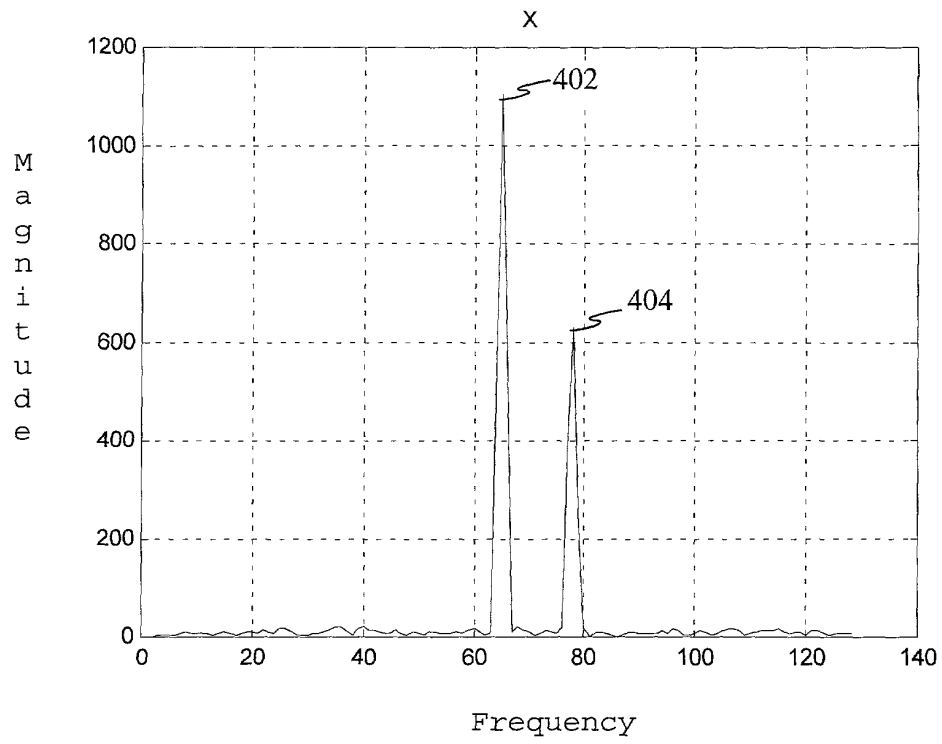


Figure 4

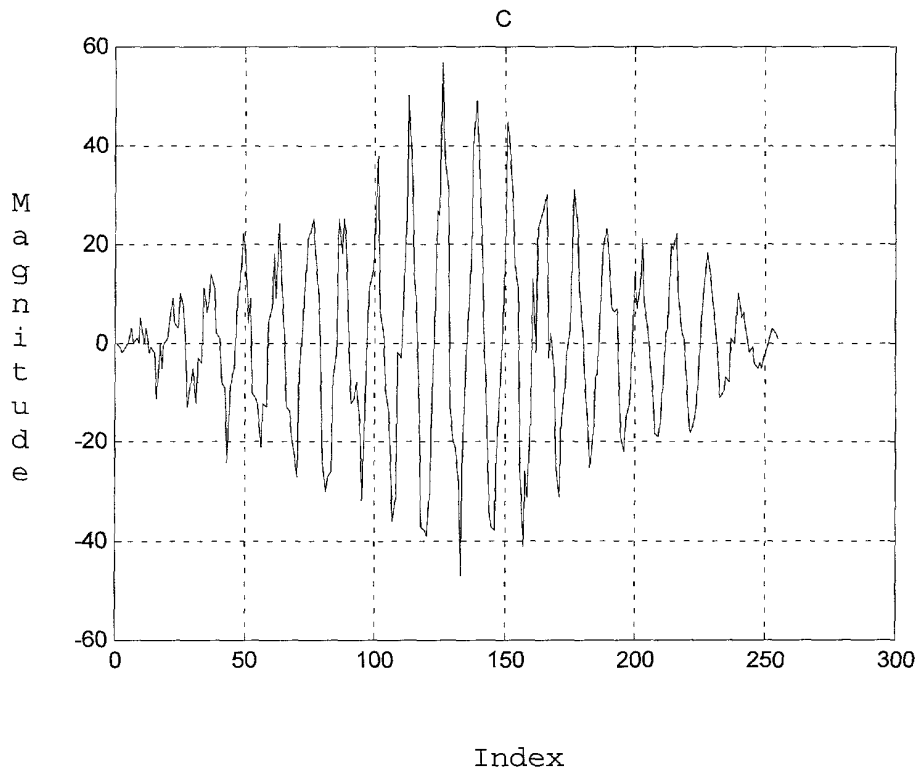


Figure 5

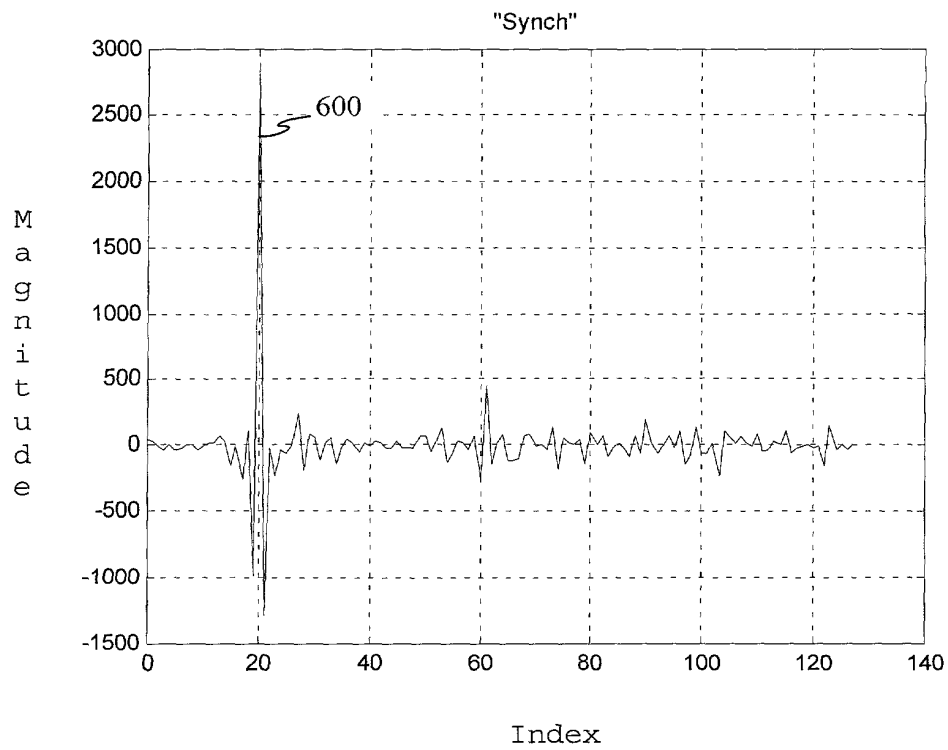


Figure 6

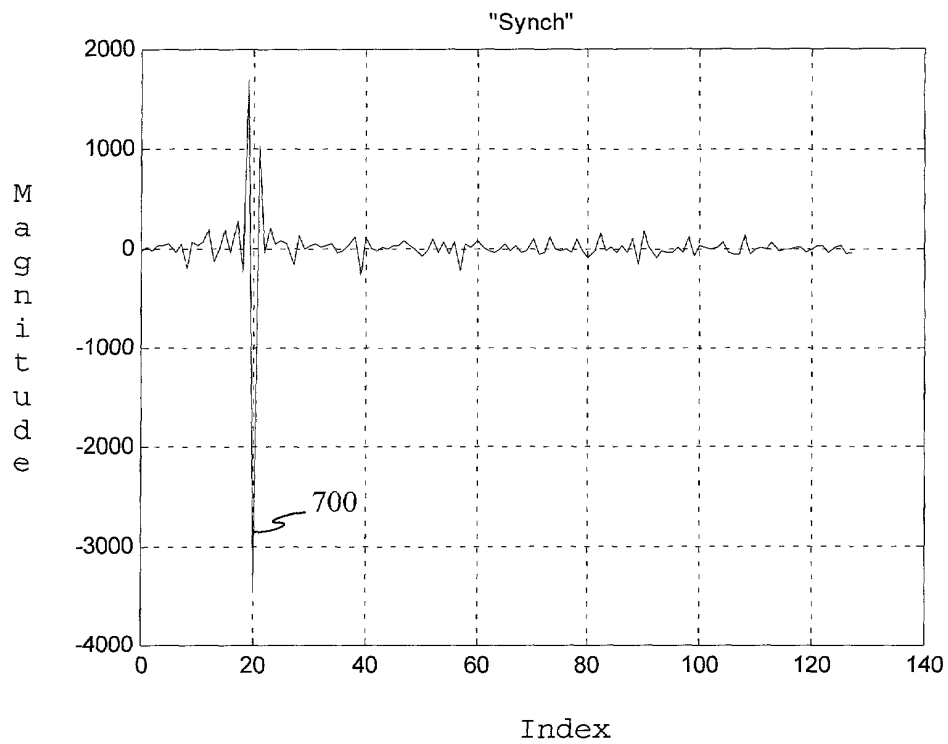


Figure 7